



1600

## RAW SEQUENCE LISTING

DATE: 08/08/2003

PATENT APPLICATION: US/09/744,100C

TIME: 11:09:41

Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

3 <110> APPLICANT: Cahoon, Rebecca  
 4 Gutteridge, Steven  
 5 Lee, Jian-Ming  
 6 McGonigle, Brian  
 7 Rafalski, Antoni  
 9 <120> TITLE OF INVENTION: Ornithine Biosynthesis Enzymes  
 11 <130> FILE REFERENCE: BB-1174  
 13 <140> CURRENT APPLICATION NUMBER: 09/744,100C  
 14 <141> CURRENT FILING DATE: 2001-01-16  
 16 <150> PRIOR APPLICATION NUMBER: PCT/US99/15931  
 17 <151> PRIOR FILING DATE: 1999-07-14  
 19 <150> PRIOR APPLICATION NUMBER: 60/093,209  
 20 <151> PRIOR FILING DATE: 1998-07-17  
 22 <160> NUMBER OF SEQ ID NOS: 12  
 24 <170> SOFTWARE: Microsoft Office 97

  
 Does Not Comply  
 Corrected Diskette Needed

## ERRORED SEQUENCES

556 <210> SEQ ID NO: 12  
 557 <211> LENGTH: 346  
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 559 <213> ORGANISM: Artificial Sequence  
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 576 <222> LOCATION: (4)  
 577 <223> OTHER INFORMATION: Xaa = Thr, Ala, OR Gly  
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 581 <222> LOCATION: (5)  
 582 <223> OTHER INFORMATION: Xaa = Lys OR NONE  
 584 <220> FEATURE:  
 585 <221> NAME/KEY: UNSURE

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592 <223> OTHER INFORMATION: Xaa = His, Tyr, OR NONE  
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601 <222> LOCATION: (9)  
602 <223> OTHER INFORMATION: Xaa = Ser, Ala, OR NONE  
604 <220> FEATURE:  
605 <221> NAME/KEY: UNSURE  
606 <222> LOCATION: (10)  
607 <223> OTHER INFORMATION: Xaa = Asn, Ser, Ala, OR NONE  
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610 <221> NAME/KEY: UNSURE  
611 <222> LOCATION: (11)  
612 <223> OTHER INFORMATION: Xaa = Ser, Lys, OR Pro  
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646 <222> LOCATION: (18)

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661 <222> LOCATION: (21)  
662 <223> OTHER INFORMATION: Xaa = Ser OR Pro  
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666 <222> LOCATION: (22)  
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671 <222> LOCATION: (24)  
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681 <222> LOCATION: (26)  
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696 <222> LOCATION: (29)  
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701 <222> LOCATION: (30)  
702 <223> OTHER INFORMATION: Xaa = Ala, Leu, OR Val  
704 <220> FEATURE:  
705 <221> NAME/KEY: UNSURE  
706 <222> LOCATION: (31)  
707 <223> OTHER INFORMATION: Xaa = Ser, Lys, Thr, OR Arg

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Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

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717 <223> OTHER INFORMATION: Xaa = Leu, Ile, OR Ser  
719 <220> FEATURE:  
720 <221> NAME/KEY: UNSURE  
721 <222> LOCATION: (34)  
722 <223> OTHER INFORMATION: Xaa = Ala OR His  
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726 <222> LOCATION: (35)  
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731 <222> LOCATION: (36)  
732 <223> OTHER INFORMATION: Xaa = Pro, Ser, OR Phe  
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736 <222> LOCATION: (37)  
737 <223> OTHER INFORMATION: Xaa = Pro, Thr, OR Ala  
739 <220> FEATURE:  
740 <221> NAME/KEY: UNSURE  
741 <222> LOCATION: (38)  
742 <223> OTHER INFORMATION: Xaa = Cys, Ala, Ser, OR Pro  
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745 <221> NAME/KEY: UNSURE  
746 <222> LOCATION: (39)  
747 <223> OTHER INFORMATION: Xaa = Arg, Pro, Thr, OR His  
749 <220> FEATURE:  
750 <221> NAME/KEY: UNSURE  
751 <222> LOCATION: (40)  
752 <223> OTHER INFORMATION: Xaa = Arg, Gly, OR NONE  
754 <220> FEATURE:  
755 <221> NAME/KEY: UNSURE  
756 <222> LOCATION: (41)  
757 <223> OTHER INFORMATION: Xaa = Arg OR Leu  
759 <220> FEATURE:  
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761 <222> LOCATION: (42)  
762 <223> OTHER INFORMATION: Xaa = Ser OR Arg  
764 <220> FEATURE:  
765 <221> NAME/KEY: UNSURE  
766 <222> LOCATION: (43)  
767 <223> OTHER INFORMATION: Xaa = Arg, Cys, His, OR Gly  
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Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

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772 <223> OTHER INFORMATION: Xaa = Arg OR Leu  
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776 <222> LOCATION: (45)  
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779 <220> FEATURE:  
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781 <222> LOCATION: (46)  
782 <223> OTHER INFORMATION: Xaa = Ile, Leu, OR Val  
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785 <221> NAME/KEY: UNSURE  
786 <222> LOCATION: (47)  
787 <223> OTHER INFORMATION: Xaa = Ser, Ala, OR NONE  
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791 <222> LOCATION: (48)  
792 <223> OTHER INFORMATION: Xaa = Ala, Val, OR NONE  
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802 <223> OTHER INFORMATION: Xaa = Ala OR Ser  
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816 <222> LOCATION: (54)  
817 <223> OTHER INFORMATION: Xaa = Pro, Gln, OR Ser  
819 <220> FEATURE:  
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821 <222> LOCATION: (55)  
822 <223> OTHER INFORMATION: Xaa = Ser, Ala, OR Pro  
824 <220> FEATURE:  
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827 <223> OTHER INFORMATION: Xaa = Pro, Ala, OR Leu  
829 <220> FEATURE:  
830 <221> NAME/KEY: UNSURE

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Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

831 <222> LOCATION: (57)  
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841 <222> LOCATION: (60)  
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844 <220> FEATURE:  
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846 <222> LOCATION: (61)  
847 <223> OTHER INFORMATION: Xaa = Ala OR Thr  
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851 <222> LOCATION: (63)  
852 <223> OTHER INFORMATION: Xaa = Thr, Ser, OR NONE  
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861 <222> LOCATION: (65)  
862 <223> OTHER INFORMATION: Xaa = Ala, Ser, OR Gly  
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865 <221> NAME/KEY: UNSURE  
866 <222> LOCATION: (66)  
867 <223> OTHER INFORMATION: Xaa = Leu OR Gln  
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871 <222> LOCATION: (67)  
872 <223> OTHER INFORMATION: Xaa = Ser, Tyr, OR Asn  
874 <220> FEATURE:  
875 <221> NAME/KEY: UNSURE  
876 <222> LOCATION: (75)  
877 <223> OTHER INFORMATION: Xaa = Ala OR Ser  
879 <220> FEATURE:  
880 <221> NAME/KEY: UNSURE  
881 <222> LOCATION: (81)  
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887 <223> OTHER INFORMATION: Xaa = Arg OR Lys  
889 <220> FEATURE:  
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891 <222> LOCATION: (87)

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Input Set : A:\BB1174 US PCT seqlistAmd.txt

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 1272 <222> LOCATION: (298)  
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 1298 <223> OTHER INFORMATION: Xaa = Thr OR Ala  
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 1304 Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1305 20 25 30  
 1307 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 1308 35 40 45  
 1310 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Xaa Xaa Ala Xaa Xaa  
 1311 50 55 60  
 1313 Xaa Xaa Xaa Arg Val Asp Val Leu Ser Glu Xaa Leu Pro Phe Ile Gln  
 1314 65 70 75 80  
 1316 Xaa Phe Xaa Gly Lys Thr Xaa Val Val Lys Tyr Gly Gly Ala Ala Met  
 1317 85 90 95  
 1319 Lys Ser Pro Glu Leu Gln Ala Ser Val Ile Xaa Asp Leu Val Leu Leu  
 1320 100 105 110  
 1322 Ser Cys Val Gly Leu Xaa Pro Val Leu Val His Gly Gly Gly Pro Glu  
 1323 115 120 125  
 1325 Ile Asn Ser Trp Leu Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Phe Arg Xaa

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Input Set : A:\BB1174 US PCT seqlistAmd.txt

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901 <222> LOCATION: (118)  
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937 <223> OTHER INFORMATION: Xaa = Gln OR Val  
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941 <222> LOCATION: (144)  
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951 <222> LOCATION: (153)  
952 <223> OTHER INFORMATION: Xaa = Thr OR Asn



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1023 <223> OTHER INFORMATION: Xaa = Gly, Trp, OR Arg  
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1027 <222> LOCATION: (186)  
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1053 <223> OTHER INFORMATION: Xaa = Glu OR Ala  
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1072 <222> LOCATION: (200)  
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Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

1077 <222> LOCATION: (201)  
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1093 <223> OTHER INFORMATION: Xaa = Glu OR Gly  
1095 <220> FEATURE:  
1096 <221> NAME/KEY: UNSURE  
1097 <222> LOCATION: (209)  
1098 <223> OTHER INFORMATION: Xaa = Ser, Trp, Ala, OR Thr  
1100 <220> FEATURE:  
1101 <221> NAME/KEY: UNSURE  
1102 <222> LOCATION: (211)  
1103 <223> OTHER INFORMATION: Xaa = Val OR Lys  
1105 <220> FEATURE:  
1106 <221> NAME/KEY: UNSURE  
1107 <222> LOCATION: (212)  
1108 <223> OTHER INFORMATION: Xaa = Asp OR Asn  
1110 <220> FEATURE:  
1111 <221> NAME/KEY: UNSURE  
1112 <222> LOCATION: (213)  
1113 <223> OTHER INFORMATION: Xaa = Ala OR Pro  
1115 <220> FEATURE:  
1116 <221> NAME/KEY: UNSURE  
1117 <222> LOCATION: (214)  
1118 <223> OTHER INFORMATION: Xaa = Thr, Ala, OR Ser  
1120 <220> FEATURE:  
1121 <221> NAME/KEY: UNSURE  
1122 <222> LOCATION: (217)  
1123 <223> OTHER INFORMATION: Xaa = Arg OR His  
1125 <220> FEATURE:  
1126 <221> NAME/KEY: UNSURE  
1127 <222> LOCATION: (218)  
1128 <223> OTHER INFORMATION: Xaa = Pro OR Ser  
1130 <220> FEATURE:  
1131 <221> NAME/KEY: UNSURE  
1132 <222> LOCATION: (219)  
1133 <223> OTHER INFORMATION: Xaa = Ile OR Leu  
1135 <220> FEATURE:  
1136 <221> NAME/KEY: UNSURE  
1137 <222> LOCATION: (221)

## RAW SEQUENCE LISTING

DATE: 08/08/2003

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1138 <223> OTHER INFORMATION: Xaa = Ala OR Asp  
1140 <220> FEATURE:  
1141 <221> NAME/KEY: UNSURE  
1142 <222> LOCATION: (222) /  
1143 <223> OTHER INFORMATION: Xaa = Thr, Ala, OR Ser  
1145 <220> FEATURE:  
1146 <221> NAME/KEY: UNSURE  
1147 <222> LOCATION: (223) /  
1148 <223> OTHER INFORMATION: Xaa = Gly OR Ser  
1150 <220> FEATURE:  
1151 <221> NAME/KEY: UNSURE  
1152 <222> LOCATION: (228) /  
1153 <223> OTHER INFORMATION: Xaa = Val OR Ile  
1155 <220> FEATURE:  
1156 <221> NAME/KEY: UNSURE  
1157 <222> LOCATION: (229) /  
1158 <223> OTHER INFORMATION: Xaa = Ala OR Thr  
1160 <220> FEATURE:  
1161 <221> NAME/KEY: UNSURE  
1162 <222> LOCATION: (230) /  
1163 <223> OTHER INFORMATION: Xaa = Thr OR Ser  
1165 <220> FEATURE:  
1166 <221> NAME/KEY: UNSURE  
1167 <222> LOCATION: (232) /  
1168 <223> OTHER INFORMATION: Xaa = Gly OR Ala  
1170 <220> FEATURE:  
1171 <221> NAME/KEY: UNSURE  
1172 <222> LOCATION: (236) /  
1173 <223> OTHER INFORMATION: Xaa = Thr OR Ser  
1175 <220> FEATURE:  
1176 <221> NAME/KEY: UNSURE  
1177 <222> LOCATION: (239) /  
1178 <223> OTHER INFORMATION: Xaa = Ala OR Pro  
1180 <220> FEATURE:  
1181 <221> NAME/KEY: UNSURE  
1182 <222> LOCATION: (247) /  
1183 <223> OTHER INFORMATION: Xaa = Ala OR Val  
1185 <220> FEATURE:  
1186 <221> NAME/KEY: UNSURE  
1187 <222> LOCATION: (251) /  
1188 <223> OTHER INFORMATION: Xaa = Ile OR Leu  
1190 <220> FEATURE:  
1191 <221> NAME/KEY: UNSURE  
1192 <222> LOCATION: (254) /  
1193 <223> OTHER INFORMATION: Xaa = Ala OR Ser  
1195 <220> FEATURE:  
1196 <221> NAME/KEY: UNSURE  
1197 <222> LOCATION: (255) /  
1198 <223> OTHER INFORMATION: Xaa = Ile, Leu, OR Val

## RAW SEQUENCE LISTING

DATE: 08/08/2003

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TIME: 11:09:41

Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

1200 <220> FEATURE:  
1201 <221> NAME/KEY: UNSURE  
1202 <222> LOCATION: (261)  
1203 <223> OTHER INFORMATION: Xaa = Leu OR Ile  
1205 <220> FEATURE:  
1206 <221> NAME/KEY: UNSURE  
1207 <222> LOCATION: (263)  
1208 <223> OTHER INFORMATION: Xaa = Ile OR Leu  
1210 <220> FEATURE:  
1211 <221> NAME/KEY: UNSURE  
1212 <222> LOCATION: (267)  
1213 <223> OTHER INFORMATION: Xaa = Ser OR Ala  
1215 <220> FEATURE:  
1216 <221> NAME/KEY: UNSURE  
1217 <222> LOCATION: (271)  
1218 <223> OTHER INFORMATION: Xaa = Glu OR Ala  
1220 <220> FEATURE:  
1221 <221> NAME/KEY: UNSURE  
1222 <222> LOCATION: (274)  
1223 <223> OTHER INFORMATION: Xaa = Asp OR Asn  
1225 <220> FEATURE:  
1226 <221> NAME/KEY: UNSURE  
1227 <222> LOCATION: (277)  
1228 <223> OTHER INFORMATION: Xaa = Gly OR Asp  
1230 <220> FEATURE:  
1231 <221> NAME/KEY: UNSURE  
1232 <222> LOCATION: (282)  
1233 <223> OTHER INFORMATION: Xaa = Val, Glu, OR Lys  
1235 <220> FEATURE:  
1236 <221> NAME/KEY: UNSURE  
1237 <222> LOCATION: (283)  
1238 <223> OTHER INFORMATION: Xaa = Val OR Ile  
1240 <220> FEATURE:  
1241 <221> NAME/KEY: UNSURE  
1242 <222> LOCATION: (286)  
1243 <223> OTHER INFORMATION: Xaa = Lys OR Ala  
1245 <220> FEATURE:  
1246 <221> NAME/KEY: UNSURE  
1247 <222> LOCATION: (290)  
1248 <223> OTHER INFORMATION: Xaa = Lys, Gln, OR Arg  
1250 <220> FEATURE:  
1251 <221> NAME/KEY: UNSURE  
1252 <222> LOCATION: (292)  
1253 <223> OTHER INFORMATION: Xaa = Val OR Met  
1255 <220> FEATURE:  
1256 <221> NAME/KEY: UNSURE  
1257 <222> LOCATION: (293)  
1258 <223> OTHER INFORMATION: Xaa = Glu OR Ala  
1260 <220> FEATURE:

## RAW SEQUENCE LISTING

DATE: 08/08/2003

PATENT APPLICATION: US/09/744,100C

TIME: 11:09:41

Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

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1326      130      135      140
1328 Gly Leu Arg Val Thr Asp Ala Xaa Xaa Met Glu Xaa Val Xaa Met Val
1329 145      150      155      160
1331 Leu Val Xaa Lys Val Asn Lys Xaa Leu Xaa Ser Leu Ile Xaa Xaa Xaa
1332      165      170      175
1334 Gly Xaa Xaa Ala Xaa Xaa Leu Xaa Xaa Xaa Xaa Arg Leu Xaa Xaa
1335      180      185      190
1337 Xaa Arg Pro Xaa Pro Xaa Xaa Xaa Leu Xaa Xaa Val Gly Xaa Val
1338      195      200      205
1340 Xaa Arg Xaa Xaa Xaa Xaa Val Leu Xaa Xaa Xaa Ile Xaa Xaa Xaa His
1341      210      215      220
1343 Ile Pro Val Xaa Xaa Xaa Val Xaa Ala Asp Glu Xaa Gly Gln Xaa Tyr
1344 225      230      235      240
1346 Asn Ile Asn Ala Asp Thr Xaa Ala Gly Glu Xaa Ala Ala Xaa Xaa Gly
1347      245      250      255
1349 Ala Glu Lys Leu Xaa Leu Xaa Thr Asp Val Xaa Gly Ile Leu Xaa Asp
1350      260      265      270
1352 Arg Xaa Asp Pro Xaa Ser Leu Val Lys Xaa Xaa Asp Ile Xaa Gly Val
1353      275      280      285
1355 Arg Xaa Met Xaa Xaa Xaa Gly Xaa Val Xaa Gly Gly Met Ile Pro Lys
1356      290      295      300
1358 Val Xaa Cys Cys Val Xaa Xaa Leu Ala Gln Gly Val Xaa Thr Ala Ser
1359 305      310      315      320
1361 Ile Leu Asp Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr
1362      325      330      335
1364 Asp Glu Gly Xaa Gly Thr Met Ile Thr Gly
1365      340      345
E--> 1378 23

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## VERIFICATION SUMMARY

DATE: 08/08/2003

PATENT APPLICATION: US/09/744,100C

TIME: 11:09:42

Input Set : A:\BB1174 US PCT seqlistAmd.txt

Output Set: N:\CRF4\08082003\I744100C.raw

L:147 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:600  
L:205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:192  
L:354 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:480  
M:341 Repeated in SeqNo=7  
L:408 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:128  
M:341 Repeated in SeqNo=8  
L:1301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0  
M:341 Repeated in SeqNo=12  
L:1378 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:12